

We claim:

1. A method for preparing a polyurea polymer formulation comprising:
admixing a polyisocyanate, an isocyanate-reactive material, and a fatty-acid ester to form a mixture, said fatty-acid ester being present in an amount effective for providing blister resistance to a molded polyurea polymer prepared from said mixture such that when said molded polyurea polymer is exposed to moisture and a temperature of at least 350°F (177°C), said molded polyurea polymer is substantially free of blisters.
2. The method of Claim 1, wherein said isocyanate-reactive material is at least one of a polyamine and a polyol.
3. The method of Claim 1, wherein a polyepoxide is admixed with said mixture.
4. The method of Claim 1, wherein said mixture has an isocyanate index of between 1.05 and 1.40.
5. The method of Claim 1, wherein said mixture has an isocyanate index of 1.20.
6. The method of Claim 3, wherein said mixture has an isocyanate index of 1.05.
7. The method of Claim 1, wherein the fatty-acid ester is jojoba oil.
8. The method of Claim 1, wherein said fatty-acid ester is present in an amount of at least 0.5 weight percent based on the weight of said mixture excluding the weight of said polyisocyanate.
9. The method of Claim 1, wherein said fatty-acid ester is present in an amount of at least 1.5 weight percent based on the weight of said mixture excluding the weight of said polyisocyanate.
10. The method of Claim 1, wherein said molded polyurea polymer is exposed to a

temperature of at least 375°F (190°C).

11. The method of Claim 1, wherein said molded polyurea polymer is exposed to a temperature of at least 390°F (199°C).

12. The method of Claim 1, wherein said molded polyurea polymer is exposed to a temperature of at least 400°F (204°C).

13. The method of Claim 1, wherein when said molded polyurea polymer is exposed to moisture, said molded polyurea polymer takes up no more than 2 weight-percent water based on the weight of said molded polyurea polymer.

14. The method of Claim 1, wherein said molded polyurea polymer is exposed to said temperature for at least 20 minutes and no longer than 60 minutes.

15. The method of Claim 1, wherein said molded polyurea polymer is molded by reaction injection molding.

16. The method of Claim 1, wherein said molded polyurea polymer is suitable for use in an e-coat process.

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17. A method of improving a molded polyurea polymer's blister resistance, said method comprising:

(A) adding an effective amount of a fatty-acid ester to a polyurea-polymer formulation comprising a polyisocyanate and an isocyanate-reactive material to prepare a mixture; and

(B) molding said mixture to prepare a molded polyurea polymer, wherein said molded mixture develops substantially fewer blisters, as compared to a molded mixture that is substantially free of a fatty-acid ester, when exposed to moisture

and a temperature of at least 350°F (177°C), said molded polyurea polymer being exposed to said temperature for at least 20 minutes and no longer than 60 minutes.

18. The method of Claim 17, wherein said mixture has an isocyanate index between 1.05 and 1.40.

19. The method of Claim 17, wherein said mixture further comprises a polyepoxide.

20. The method of Claim 17, wherein said fatty-acid ester is jojoba oil.

21. The method of Claim 17, wherein said isocyanate-reactive material is at least one of a polyamine and a polyol.

22. The method of Claim 17, wherein said fatty-acid ester is present in an amount of at least 0.5 weight percent based on the weight of said mixture excluding the weight of said polyisocyanate.

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A2/23. The method of Claim 17, wherein said molded polyurea polymer is exposed to a temperature of at least 375°F (190°C).

24. The method of Claim 17, wherein when said molded polyurea polymer is exposed to moisture, said molded polyurea polymer takes up no more than 2 weight-percent water based on the weight of said molded polyurea polymer.

25. The method of Claim 17, wherein said mixture is molded by reaction injection molding.

26. A polyurea-polymer formulation prepared by a method comprising:
admixing a polyisocyanate, an isocyanate-reactive material, and a fatty-acid ester to form a mixture, said fatty-acid ester being present in an amount effective for providing blister resistance to a molded polyurea polymer prepared from said mixture such that

when said molded polyurea polymer is exposed to moisture and a temperature of at least 350°F (177°C), said molded polyurea polymer is substantially free of blisters.

27. A molded polyurea polymer prepared by a method comprising:

(A) admixing a polyisocyanate, an isocyanate-reactive material, and a fatty-acid ester to form a mixture; and

(B) molding said mixture using reaction injection molding to form a molded polyurea polymer,

wherein said mixture contains said fatty-acid ester in an amount effective for providing blister resistance to said molded polyurea polymer such that when said molded polyurea polymer is exposed to moisture and a temperature of at least 350°F (177°C), said molded polyurea polymer is substantially free of blisters.

28. A polyurea-polymer formulation suitable for preparing a molded polyurea polymer, said formulation comprising: a polyisocyanate, an isocyanate-reactive material, and a fatty-acid ester, said fatty-acid ester being present in an amount effective for providing blister resistance to a molded polyurea polymer prepared from said formulation such that when said molded polyurea polymer is exposed to moisture and a temperature of at least 350°F (177°C), said molded polyurea polymer is substantially free of blisters.

29. The formulation of Claim 28, wherein said isocyanate-reactive material is at least one of a polyamine and a polyol.

30. The formulation of Claim 28, wherein said fatty-acid ester is jojoba oil.

31. The formulation of Claim 28 further comprising at least one additive, said additive being at least one of a chain extender, a catalyst, a surfactant, and an internal-mold-release agent.

32. The formulation of Claim 28 further comprising a polyepoxide.